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## **Abstract**

Collaborative learning tasks have been used extensively to enhance the literacy development of English language learners for many years. In some cases, however, peer-assisted activities stifle language learning due to dominant–passive interaction patterns and the onset of performance anxiety. The proliferation of web-based information and communication technologies has provided an alternative to face-to-face interactions that can potentially overcome these limitations of collaborative literacy tasks. This paper will investigate the use of applications such as Google Docs, Facebook, Internet blogs and wikis in both school and home environments. The benefits of using such technology to increase the participation, co-operation and literacy development of English language learners during collaborative learning tasks will be discussed.



## **Using information and communication technologies to promote participation and peer co-operation during collaborative literacy tasks for English-language learners**

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Collaborative learning tasks have been used extensively to enhance the literacy development of English language learners for many years. In some cases, however, peer-assisted activities stifle language learning due to dominant–passive interaction patterns and the onset of performance anxiety. The proliferation of web-based information and communication technologies has provided an alternative to face-to-face interactions that can potentially overcome these limitations of collaborative literacy tasks. This paper will investigate the use of applications such as Google Docs, Facebook, Internet blogs and wikis in both school and home environments. The benefits of using such technology to increase the participation, co-operation and literacy development of English language learners during collaborative learning tasks will be discussed.

**Keywords:** English as an additional language or dialect (EAL/D); English language learner (ELL); socio-cultural theory; computer-mediated communication (CMC); information and communication technology (ICT)

### **Introduction**

The cultural and linguistic make-up of Australian schools is becoming more diverse due to the continual intake of migrant students from a language background other than English (LBOTE). In many cases, these students are given limited opportunities to speak English outside of the school environment and require direct English as an Additional Language or Dialect (EAL/D) support. In 2013, EAL/D students accounted for over 18% of enrolments in NSW primary and secondary public schools, presenting teachers in mainstream classes with many unique challenges (NSW DEC, 2013). Chief amongst such obstacles is how to improve the literacy outcomes of this population, given the inherent disadvantages of having limited access to English language learning at home. One solution leading the way in the field of EAL/D education is using web-based information and communication technology (ICT) to support collaborative literacy tasks within both school and home environments. In order to explore such research, this paper will identify the effectiveness of collaborative English language learning in general, before focusing on the potential of ICT in improving participation and peer co-operation during collaborative language learning episodes for EAL/D students.



### **Collaborative learning**

In recent decades, collaborative learning has become a key teaching tool in the English language learning environment. Collaborative (or peer-assisted) learning involves groups of two or more students working co-operatively on a task to achieve a common goal (Lan, Sung & Chang, 2007; Lund, 2008). The benefits of pair and group work in second language (L2) environments are well established in current literature. Numerous studies have concluded that peer-assisted activities enhance the instruction of literacy, leading to improved language learning outcomes (Ghaith, 2003; Greenwood, 1996; Strauss & U, 2007; Wigglesworth & Storch, 2009). It is suggested that learners engaging in collaborative work are given more opportunities to use the L2 for novel purposes, in comparison to teacher-fronted or independent tasks (Long & Porter, 1985). These opportunities for L2 input and output ultimately provide EAL/D students with the practice they require to improve their spoken English fluency (Strauss & U, 2007). More specifically, when English language learners (ELLs) work in pairs or small groups with more-competent English speakers, they are able to engage in negotiating moves, such as requesting clarification of meanings, confirmation checks and recasts, which makes the language input more comprehensible and allows them to bridge gaps in their linguistic repertoire (Long, 1996; Mackey, 1999). In terms of writing proficiency, it is argued that ELLs working collaboratively with peers, whose English is a native language, perform better on written tasks than students completing the same task individually (Wigglesworth & Storch, 2009). Wigglesworth and Storch (2009) suggest the joint writing tasks allow students to combine their language resources and attend to gaps in their linguistic knowledge through negotiation moves. Whilst significant, the research above have approached collaborative learning from a L2 acquisition or interaction hypothesis theoretical perspective and, therefore, do not attend to the vital role of social context and social interaction in language learning, both of which are central issues when viewing English language learning through a socio-cultural lens.

The concept of peer-assisted activities is a fundamental element of studies approaching English language learning from a socio-cultural theoretical perspective. From this perspective, social interaction drives cognitive development and, therefore, language development. The process of producing language (what is being said) and reflecting on the product (what was said) of the language produced, both contribute to and ‘mediate’ learning within any interaction (Swain, 2005; Vygotsky, 1980). Recent studies from this theoretical perspective have shown that the social interaction of collaborative learning promotes the amalgamation of linguistic resources, allowing learners to co-construct linguistic knowledge (Aldosari & Storch, 2006; Tan, Wigglesworth & Storch, 2011). This pooling of linguistic resources is referred to as ‘collective scaffolding’, where members of the group support each other’s language development (Donato, 1994). The concept of scaffolding is synonymous with sociocultural theory and, more specifically, ‘the zone of proximal development’, which posits that learners are able to reach their potential for cognitive development when their learning is scaffolded by more expert peers (Vygotsky, 1980). Through this lens, the positive effects of scaffolding and peer tutoring from more-competent language users can be understood (Hickey, 2007; Rohrbeck et al., 2003). Within an interaction, this language pattern is known as an expert–novice exchange, where both individuals take turns offering and receiving assistance (Aldosari & Storch, 2006).



Collaborative learning activities do not, however, always promote interactions that are conducive to language learning (Aldosari & Storch, 2006). In some cases, the more-competent language user dominates the interaction, while the ELL rarely engages (a dominant–passive pattern), leading to fewer opportunities for the co-construction of linguistic knowledge (Aldosari & Storch, 2006). Similarly, a study of undergraduate university students’ peer feedback on writing tasks between native speakers of English and ELLs found that the native speakers tended to dominate the interaction turns, were more directional in the outcomes of the interaction and less suggestive toward how ELLs could improve their L2 output. Such patterns established a power differential that had a negative effect on the quality of feedback and writing development for the ELL participants (Thonus, 2004).

Pair and group activities with native speakers of English are also suggested to induce ‘foreign-language anxiety’ amongst some ELLs, often resulting in a lack of motivation to participate in collaborative tasks (Hashemi, 2011; Liu, 2006; Mak, 2011). Foreign-language anxiety is a specific experience that can be classified separately from other forms of anxiety due to its distinctive characteristics and triggers, namely feelings of fear, stress and nervousness when speaking a foreign language (Hashemi, 2011). Other indicators include task avoidance, visible signs of nervousness, freezing up during oral performances and an inability to recall prior knowledge of vocabulary and grammar during writing assessments (Liu, 2006). According to a large-scale study of university students in Hong Kong, the main factors contributing toward foreign-language anxiety are “fear of negative evaluation, speaking with native language users, inadequate wait time for their responses and being corrected when speaking” (Mak, 2011 p. 2010). Many of these factors can be triggered by collaborative learning activities, encouraging further research into how to promote participation and interaction by balancing turn taking and reducing anxiety during such tasks.

### **Promoting participation using ICT**

One solution that has been proposed within current research is using web-based ICT to promote participation of ELLs in collaborative learning tasks. A number of studies have suggested that computer-mediated communication (CMC), as exemplified by online chat rooms, blogs, wikis, Skype and Facebook, may affect participation rates for ELLs in collaborative literacy activities. Considering the growing accessibility of web-based technologies, educators are being urged to incorporate such tools into the classroom and provide opportunities for ELLs to complete collaborative writing tasks with their peers online in the home environment.

According to the current research literature, CMC can elicit equality in the rates of participation between ELLs and native English speakers. For example, a recent study by Zheng and Warschauer (2015) of 48 fifth-grade students in the United States found that the participation rates of EAL/D and native English speaking students were almost equal during ‘well-structured’ collaborative writing tasks when blogs and social media were used as mediating tools. The writing tasks included personal reflections on whole-class readings using a collaborative class blog, writing/editing personal blog posts and receiving instantaneous feedback from peers, commenting on the blog posts of peers to provide real-time feedback and Skyping classmates during the blog writing process. Over a period of eight months, these



computer-mediated learning episodes gradually led to more-frequent contributions by the ELLs which, in turn, improved their language and literacy development, as evidenced by results in pre-experiment and post-experiment tests (Zheng & Warschauer, 2015). Such evidence indicates that the use of ICT may promote the participation of ELLs in writing tasks over time.

The capacity of CMC to encourage ELL participation is accentuated further when compared to face-to-face communication. Tan, Wigglesworth and Storch (2011) concluded that the use of online discussion boards during collaborative writing tasks at home stimulated higher rates of ELL participation than face-to-face interactions in the classroom. In this case, they argued that CMC provided ELLs with more opportunities for involvement and language input during language activities. On the other hand, face-to-face interactions appeared to promote dominant–passive language patterns, whereby native English speakers dominated the amount of interaction turns and moves. Similarly, Warschauer (2013) demonstrated that CMC tended to produce more equal participatory patterns for EAL/D students when compared to face-to-face interactions. This study of 16 EAL/D students in a United States elementary school analysed the participants as they conducted face-to-face and online chat room discussions in four small groups. The findings revealed that three of the four groups exhibited substantially more equal rates of contribution in online discussions, and overall ELL involvement was twice as large during online discussion when compared to face-face discussion. Therefore, there is support for the argument that ICT can encourage more ELL participation than face-to-face learning episodes.

According to several studies, this increased participation in CMC tasks may be attributed to reductions in foreign language anxiety (Kitade, 2000; Roed, 2003; Tan, Wigglesworth & Storch, 2011; Warschauer, 2013). For example, Warschauer (2013) claims that shyness may cause ELLs to limit input during face-to-face interaction, and participate more equally during CMC. Student surveys from Warschauer's study suggest that 'lack of confidence in speaking English' and 'discomfort in producing language output' are important factors in determining students' relative participation in face-to-face interaction and CMC. According to Warschauer, this is due to a strong correlation between students, who perceive a lack of personal oral fluency with higher rates of participation in CMC, compared to much lower rates of involvement during face-to-face discussion. It is suggested that CMC alleviates response time pressures by allowing the students to communicate at their own pace and revise their language output before sending it to their online peers (Tan, Wigglesworth & Storch, 2011). In another study, Roed (2003) compared the participation of ELLs in CMC and face-to-face interactions and found that CMC encouraged student involvement, particularly if the ELLs were considered to be shy. Roed proposed that such changes in participatory behaviours are due to reductions in language-performance pressures and anxiety when communicating online as opposed to face-to-face. Overall, CMC appears to provide more time to process language input and more opportunities to monitor output, thus minimising foreign-language anxiety and, consequently, improving ELL participation in collaborative literacy tasks (Tan, Wigglesworth & Storch, 2011).

Increased motivation to engage in collaborative literacy tasks, due to the incorporation of ICT, is also suggested to be a contributing factor toward improved participation of ELLs. This phenomenon is exemplified by Chen and Brown's (2012) case study of EAL/D university students in the U.S., which demonstrates how using



online ‘wikis’ for collaborative writing tasks can increase motivation and involvement. The study found that the students were motivated by ‘healthy competition’ with their peers, and were able to scaffold their own wiki projects by viewing the work of fellow students and receiving immediate feedback via online comments. As viewing their peers’ projects was a personal choice, the students’ motivation was considered to be intrinsic, leading to greater content and creativity in their own writing. Having the option to instantly assess and comment on the writing of other groups motivated the students to “emulate aspects of their peers’ work which they considered to be ideal, necessary and relevant to their own goals” (p. 447). Such rapid whole-class co-construction of linguistic knowledge occurred almost autonomously, without the intervention of the teacher, highlighting the effectiveness of using wikis to promote participation and interaction in collaborative literacy tasks.

Web-based ICT tools such as blogs and Facebook can lead to similar increases in EAL/D student motivation. By using such technology, ELLs have the platform to complete peer-assisted writing tasks in the home environment in ways that are engaging, interesting and motivating. For example, Gebhard, Shin and Seger (2013) demonstrated that, when compared with face-to-face interactions, the use of class blogs improves the enjoyment, willingness, confidence and comfort levels of ELLs as they provide feedback and evaluation for each other’s writing. They also proposed that such positive outcomes are a direct result of reductions in anxiety of negative peer approval if critical feedback is offered, and the ability to think about, revise and monitor their feedback before sending it to their peers via blog comments. Gebhard, Shin and Seger further proposed that being able to offer feedback at their own pace ultimately improves the quality and depth of the students’ responses, leading to greater improvements in writing development for the assessed peer. Likewise, the use of Facebook can substantially increase the enjoyment, engagement and effectiveness of EAL/D students’ peer-assessment and feedback during writing tasks. Shih (2011), for example, posits that the advantages of using Facebook for collaborative writing include convenience, anxiety reduction and substantial increases in attentiveness to the task. Furthermore, the ELLs in this study were often motivated to provide quality feedback on peer writing in the home environment due to the accessibility of Facebook and the instantaneous nature of CMC that may have improved engagement levels (Shih, 2011). Such studies provide evidence that incorporating ICT into the English language classroom has the potential to motivate students to participate in writing activities.

CMC does not, however, ensure increased participation in all cases (Lantolf, Thorne & Poehner, 2015). On one hand, prior experience with online chat services is said to affect student input, as learners with low levels of experience are less likely to contribute to computer-mediated tasks (Lantolf, Thorne & Poehner, 2015; Tan, Wigglesworth & Storch, 2011). On the other hand, students with higher levels of online chat experience are markedly more likely to participate. In their study of Chinese university students in the United States, Li and Zhu (2013) concluded that not all students take advantage of CMC during collaborative writing tasks. The authors posit that a combination of learner attributes “may influence the dynamics of computer-mediated interactions: group member familiarity, language proficiency, technology skills, and motivation” (Li & Zhu 2013, p. 78). Consequently, language instructors and teachers must pay close attention to task design when using ICT,



ensuring groups and pairs are able to work co-operatively and effectively in order to promote the participation of all students. Additionally, allowing students to use ICT may lead to distractions and temptations to stray off-task. For example, a student using a web-based ICT tool such as a blog may choose to read interesting blogs instead of writing their own. As a result, the teacher must maintain strict supervision and design lessons that optimise engagement. Overall, however, there is substantial evidence to suggest that using web-based ICT can encourage ELLs to participate in collaborative literacy tasks more readily, and that any barriers to involvement may be overcome through attentive planning and organisation.

### **Promoting peer co-operation using ICT**

As highlighted earlier, interaction patterns between ELLs and more-competent peers during collaborative literacy tasks may not promote co-operation and co-construction of language knowledge. The studies above have suggested that using web-based ICT, such as blogs, wikis, online chat rooms and Skype, may promote more-supportive and equal language patterns, providing an effective alternative or supplementation to traditional face-to-face interactions. Such interventions have resulted in improved language and literacy development for ELLs, and, therefore, merit the attention of educators and researchers within EAL/D contexts.

Immediate support and feedback on literacy tasks using online chat and Skype is one such innovation that is proposed to increase peer co-operation in the classroom. Lan, Sung and Chang (2007), for example, developed a mobile-device-supported learning system to improve collaboration between ELLs. The learning system consisted of a web application that allowed students to request real-time assistance or feedback from their peers via text chat or video chat as they completed a series of reading tasks. Students who completed the reading tasks at a commendable level became ‘experts’ and were available for other students to contact/video call for support via a link on the application. The quasi-experimental study analysed video data of two classes of 26 third-grade students as they completed separate peer-assisted reading tasks. ELLs who received traditional face-to-face assistance experienced ‘delayed support’, limited feedback on their reading performance and dominant–passive interaction patterns that often led to conflict. On the other hand, ELLs who used the mobile-device-supported learning system were more focused on the reading task, received immediate and extensive feedback, were more likely to request assistance from peers, and experienced reductions in anxiety. According to the study, the online learning system provided ELLs with immediate peer assistance, alleviated stress caused by time pressures and allowed the ‘expert’ students to provide feedback at their own pace, leading to more-extensive and effective scaffolding (Lan, Sung & Chang, 2007).

In a similar experimental study, Zeng and Takatsuka (2009) demonstrated how online chat support from teachers and more-expert peers encouraged co-operative dialogue that resulted in enhanced language learning. The findings of this study posit that the ELLs often collaborated to solve language problems and paid substantial attention to language form when using online chat to complete peer-assisted writing tasks. “In this collaborative learning process, they stated or invited opinions, asked for or received help, expressed agreement or disagreement, self corrected or corrected each other, and modified initial utterances or explored alternatives” (p. 443).





Furthermore, the ELL participants developed a meta-language by using English in mutual exchanges to evaluate the use of English within their texts. This process led to collective scaffolding, whereby the group members assisted each other's language performance within their Zone of Proximal Development. Consequently, their language learning was enhanced, as evidenced by the higher results in the post-tests following the four online collaborative writing tasks (Zeng & Takatsuka, 2009). Evidently, using web-based chat rooms can potentially promote co-operation and language learning during literacy episodes.

Direct synchronous feedback and assistance (provided students write in real time) during writing tasks, made possible by web-based applications such as Google Docs, also provides an effective tool for encouraging peer co-operation (Shintani, 2015). This is exemplified in Shintani's (2015) study of ELLs attending a Japanese university, in which the participants received either synchronous or asynchronous feedback (provided after students finish writing) during an English writing lesson. The findings indicate many advantages of the synchronous feedback condition, which involved researchers and more-expert peers delivering immediate feedback as the participants composed various texts via a chat and real-time editing option provided by the online application Google Docs. Synchronous feedback arguably provides an interactive process, whereby the ELL is able to experience a three-step cycle of language acquisition: (1) internalisation; (2) modification; (3) consolidation (Williams, 2012). This was also the case in Shintani's (2015) study. First, the student noticed incorrect form while writing, before receiving instantaneous assistance in producing the correct form by an expert peer. This allowed the student to view and internalise the correct writing form. Second, the learner was able to amend the error immediately, enabling modification during the writing process. Third, the student had the opportunity to reproduce the correct form later in the text, effectively realising consolidation. This cycle was not apparent within the asynchronous condition, as the students had no opportunity to instantly continue writing in order to consolidate the internalised and modified language forms they had received during feedback (Shintani, 2015). These findings further highlight the potential of web-based ICT in fostering co-operative and supportive interaction patterns between ELLs and their peers during collaborative literacy lessons.

## **Conclusion**

The potential for improving the literacy outcomes for EAL/D students by using web-based ICT during collaborative learning tasks is clearly gaining a wealth of support in current literature. In summary, recent studies argue that collaborative learning tasks lead to improvements in literacy development for English Language Learners (ELLs) due to opportunities for 'collective scaffolding' and authentic language input/output (Wigglesworth & Storch, 2009). In some cases, however, collaborative activities are dominated by the more-competent language users (Aldosari & Storch, 2006) and may induce foreign-language anxiety amongst EAL/D students (Mak, 2011), leading to reductions in participation and peer co-operation. Consequently, in order to promote ELL participation and co-operation in peer-assisted learning episodes, studies suggest using web-based ICT such as blogs, wikis, Google Docs, Skype, Facebook and online chat services. According to this research, such applications encourage ELL participation by alleviating response-time pressures (Tan, Wigglesworth & Storch,



2010), minimising foreign-language anxiety (Warschauer, 2013) and increasing motivation (Chen & Brown, 2011). In terms of peer co-operation, ICT provides immediate peer-assistance, allows for extensive peer feedback, contributes to more-collaborative interactions (Lan, Sung & Chang, 2007) and can lead to the internalisation, modification and consolidation of language forms due to real-time scaffolding from more-expert peers (Shintani, 2015). The authors of the majority of this research tend to agree that computer-mediated communication (CMC) aids ELL participation and peer co-operation more effectively than traditional face-to-face interactions. Whilst the benefits of using web-based ICT in the L2 classroom are significant, it is important for teachers to understand and acknowledge the potential limitations. These include students' lack of experience with ICT leading to decreased participation (Tan, Wigglesworth & Storch, 2011), students' level of familiarity with members in their group negatively affecting participation (Li & Zhu, 2013), and increases in off-task behaviour due to accessibility of online entertainment. Therefore, teachers must pay significant attention to the students' attentiveness, whilst assigning group members before collaborative tasks and maintain strict supervision during computer-mediated lessons. Considering these challenges, using web-based ICT to support ELLs is clearly a field that demands further research, as the potential benefits are exciting and extensive.

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